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(54) OXIDE SUPERCONDUCTOR, MANUFACTURE THEREOF, AND SUPERCONDUCTING COIL

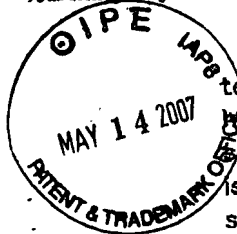
(57)Abstract:

PURPOSE: To obtain an oxide superconductive wire material of which critical current density is less likely to be reduced corresponding to the direction of a magnetic force line by setting part or all of orientation directions of an element wire in a cross section to be different from each other.

CONSTITUTION: Starting materials of Ti_2O_3 , BaO , CuO or Bi_2O_3 , SrO , CaO , CuO , and PbO are mixed at a desired composition ratio, and thallium compounds are baked $850^\circ C$, and bismuth compounds at $845^\circ C$, in a crucible of alumina having a cover in open air. Temporarily baked powders are crushed in an automated mortar, and moulded into pellets of a diameter of 30mm and a thickness of 3mm. These pellets are taken baked at $850^\circ C$ for thallium compounds, or $845^\circ C$ for bismuth compounds to be superconductor, and after obtained matter is crushed and molded into pellets of a diameter of 50mm and a thickness of 8mm, the pellets are baked under a high



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temperature uniaxial pressure using a hot press, so crystals of thallium or bismuth oxide having composition with 90% oriented in the a-b surface are obtained in the circular plate surface of the pellets. Around rod of Ag of an outer diameter 30mm and a length of 60mm is then prepared, 8 holes of a diameter of 3.3mm are opened, and rods of the superconductor are inserted into the holes. Both end parts are then sealed by an Ag rod of a diameter of 3mm, a drawing work is applied, and a wire of an outer size of 1.5mm and a length of 2.4m is formed.

LEGAL STATUS

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